



Division of Water Resources / State Revolving Fund Loan Program

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FINDING OF NO SIGNIFICANT IMPACT

Approval of Facilities Plan

Cleveland (Bradley County), Tennessee

Loan Nos. DW6 2017-192 and DWF 2017-193

March 29, 2017

The National Environmental Policy Act requires federally designated agencies to determine whether a proposed major agency action will significantly affect the environment. One such major action, defined by the Safe Drinking Water Act (SDWA), is the approval of a facilities plan prepared pursuant to EPA 816-R-97-005, Final Guidelines. In making this determination, the State Revolving Fund Loan Program assumes that all facilities and actions recommended by the plan will be implemented. The State's analysis concludes that implementing the plan will not significantly affect the environment; accordingly, the State Revolving Fund Loan Program is issuing this Finding of No Significant Impact (FNSI) for public review.

The City of Cleveland has completed the facilities plan entitled "Georgetown Road Water Storage Tank, Booster Pumping Station, and Water Main Extension" dated October 2016. The facilities plan provides recommendations to construct a 0.5 million gallon above ground concrete storage tank, a new 600 gallons per minute water booster pump station on Georgetown Road, replacement of approximately 3,050 linear feet of 12-inch diameter ductile iron pipe (DIP) main extension along Georgetown Road, and construction of approximately 1,130 linear feet of 12-inch diameter DIP transmission main along Georgetown Circle to the proposed Georgetown Road storage tank. The total estimated project cost is \$1,195,000. Two DWSRF loans totaling \$1,195,000 have been requested for this project. The first loan (DW6 2017-192) will be for \$800,000 with \$200,000 in principle forgiveness that will not have to be repaid. The second loan (DWF 2017-193) will be for \$195,000.

Attached is an Environmental Assessment containing detailed information supporting this action. Comments supporting or disagreeing with this proposed action received within 30 days of the date of this FNSI will be evaluated before we make a final decision to proceed.

If you wish to comment or to challenge this FNSI, send your written comment(s) to:

Mr. Sam R. Gaddipati, Environmental Manager
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or call or e-mail (615) 532-0462 or sam.gaddipati@tn.gov.

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A. PROPOSED FACILITIES AND ACTIONS; FUNDING STATUS

The facilities plan provides recommendations to construct a 0.5 million gallon above ground concrete storage tank, a new 600 gallons per minute water booster pump station on Georgetown Road, replacement of approximately 3,050 linear feet of 12-inch diameter ductile iron pipe (DIP) main extension along Georgetown Road, and construction of approximately 1,130 linear feet of 12-inch diameter DIP transmission main along Georgetown Circle to the proposed Georgetown Road storage tank. The facilities planning area and project location are indicated on Figure Nos. 1 and 2 of this Environmental Assessment.

Descriptions of the proposed facilities and actions included in this project are listed below:

FUNDING STATUS

The facilities described above comprise the scope of the Loan Nos. DW6 2017-192 and DWF 2017-193 scheduled for funding in fiscal year 2016. The estimated project costs are summarized in the following tabulation:

<u>PROJECT CLASSIFICATIONS</u>	<u>COSTS (\$)</u>
Planning Fees	10,000
Design Fees	5,000
Other Engineering Fees	35,000
Construction	1,075,000
Contingencies	70,000
TOTAL	1,195,000
Loans	995,000
Amount Designated for Principal Forgiveness (Will not have to be repaid)	200,000

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B. EXISTING ENVIRONMENT

The City of Cleveland's Planning Area is located in Bradley County in east Tennessee. A discussion of existing environmental features in the area includes the following:

SURFACE WATERS

Surface waters within Cleveland's Planning Area include the Hiwassee River, Candies Creek, Mouse Creek and their associated tributaries. Designated uses for Hiwassee River are domestic water supply, industrial water supply, irrigation, navigation, recreation, livestock watering, and fish/aquatic life. Raw water for the City of Cleveland's water treatment plant

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(WTP) and the Hiwassee Utilities Commission; (HUC); HUC WTP's raw water is obtained from the Hiwassee River.

GROUNDWATER

Many residents in the rural areas of Cleveland's Planning Area obtain their drinking water from wells. The Waterville Springs WTP draws water from Waterville Springs. Groundwater in the planning area occurs primarily in fractures of calcareous rocks. This area is primarily underlain by the Conasauga shale. The quality of the ground water is generally good.

SOILS

The predominant soil association occurring in the planning area is the Fullerton Soils. Fullerton Soils are deep, gently sloping to steep, cherty, well-drained soils that were formed from the residuum of limestone. These soils are typically very light, yellowish-gray, gravelly (chert) silt loams with yellow to reddish-brown silt loam subsoils. The capacities of the limiting layer of soil to transport water ranges from low to moderately high.

TOPOGRAPHY

The planning area lies in the Valley and Ridge Province and consists of alternating ridges and valleys. The average elevation in the planning area is 980 feet above mean sea level, and is characterized by mild to steep slopes.

OTHER ENVIRONMENTAL FEATURES

No wild or scenic rivers or unique agricultural, scientific, cultural, ecological, or natural areas were identified in the City of Cleveland's Planning Area.

C. EXISTING WATER FACILITIES

Cleveland's water treatment system consists of an 8.0 million gallons per day (MGD) WTP, a 1.4 MGD Waterville Springs WTP, and a distribution system. The Cleveland WTP constructed in 1954, withdraws water from the Hiwassee River. The Waterville Springs WTP constructed in 1938, draws water from Waterville Springs. Cleveland also operates the HUC WTP, which was constructed in 1982, and also withdraws water from the Hiwassee River, and has a capacity of 15 MGD. Cleveland has a contract with HUC to purchase up to 9.7 MGD of water.

The distribution system, originally constructed in 1954, consists of approximately 750 miles of waterlines ranging from 3/4-inch to 24-inch diameter pipes. The system primarily consists of cast iron pipe, ductile iron pipe (DIP), and polyvinyl chloride (PVC) pipes. There are ten water storage tanks with a total capacity of 15.3 million gallons.

D. NEED FOR PROPOSED FACILITIES AND ACTIONS

The City of Cleveland is unable to provide service to its customers in the Georgetown Road Pressure Zone due to higher elevations, and is forced to purchase water from Savannah Valley Utility District (SVUD). This area is served by White Oak Booster Pump Station. This booster pump station is undersized and is in need of replacement. Implementation of this project will provide a more reliable water supply and constant pressure in the Georgetown Road Pressure Zone.

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Existing and projected facility conditions are shown in the following chart:

EXISTING AND PROJECTED FACILITY CONDITIONS

<u>POPULATION</u>	<u>EXISTING (2017)</u>	<u>PROJECTED (2037)</u>
City of Cleveland	42,000	50,000
Percent Served	100%	100%
Planning Area Excluding Cleveland	63,000	75,000
Percent Served	60%	65%
Total Planning Area	105,000	125,000
Percent Served	76%	79%

<u>WATER NEEDS (gallons per day)</u>	<u>EXISTING (2017)</u>	<u>PROJECTED (2037)</u>
Residential	3,800,000	5,200,000
Commercial/Industrial	3,860,000	6,280,000
Unaccounted for Water	2,500,000	3,120,000
TOTAL	10,160,000	14,600,000

E. ALTERNATIVES ANALYSIS

Several alternatives were evaluated in the October 2016 Facilities Plan. Discussions of the evaluation of these alternatives and the recommended plan are following:

NO-ACTION

The No-Action approach is not a viable alternative because the customers in the Georgetown Road Pressure Zone will continue to experience water shortages and low pressures. It is also not economically feasible for Cleveland to purchase water from SVUD in the long term. Therefore this alternative is rejected.

CONSTRUCTION OF A LARGER BOOSTER PUMP STATION AND NO TANK

This alternative consists of a new booster pump station to provide redundancy and pumping capacity for Cleveland's water distribution system in the Georgetown Road Pressure Zone, but this will not allow Cleveland to stop purchasing water from SVUD. Thus this alternative will solve only part of the need for Cleveland. This was not the most cost-effective solution and was rejected.

PURCHASE OF WATER FROM SVUD FOR GEORGETOWN PRESSURE ZONE

This alternative would expand the area to which SVUD would provide water to the Georgetown Pressure Zone. This alternative would also require upgrades to SVUD's existing infrastructure,

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for which Cleveland would be responsible for funding, but will not be owned by Cleveland. This was not the most cost-effective solution and was rejected.

CONSTRUCTION OF A NEW WATER STORAGE TANK, BOOSTER PUMP STATION, AND 12-INCH DIAMETER WATER MAIN EXTENSION

This alternative consists of construction of a 0.5 million gallon above ground concrete storage tank, new 600 gallons per minute water booster pump station on Georgetown Road, construction of approximately 3,050 linear feet of 12-inch diameter DIP main extension along Georgetown Road to connect to the existing main, and construction of approximately 1,130 linear feet of 12-inch diameter DIP transmission main along Georgetown Circle to the proposed Georgetown Road storage tank. Water will be pumped from the Cleveland & Hiwassee WTPs with the new booster pump, transported to the new tank and distributed to the Georgetown Road Pressure Zone area utilizing the new water line. This was the most cost-effective solution and was selected.

F. ENVIRONMENTAL CONSEQUENCES; MITIGATIVE MEASURES

The environmental benefits of this project will be the improvement of water supply conditions in the area and improvement to public health by availability of water without shortages, as well sufficient pressure.

During the construction phase, short-term environmental impacts due to noise, dust, mud, disruption of traffic, runoff of silt with rainfall, etc., are unavoidable. Minimization of these impacts will be required; however, many of these minimization measures will only be temporary. Using the following measures to prevent erosion will minimize impacts on the environment:

1. Specifications will include temporary and permanent measures to be used for controlling erosion and sediment.
2. Soil or landscaping maintenance procedures will be included in the specifications.
3. The contractor will develop an Erosion Control Plan. It should contain a construction schedule for each temporary and permanent measure controlling erosion and sediment. It should include the location, type, and purpose for each measure and the times when temporary measures will be removed or replaced.

These measures, along with requiring the contractor to return the construction site to as-good-as or better-than its original condition, will prevent any adverse impacts due to erosion.

G. PUBLIC PARTICIPATION; SOURCES CONSULTED

A public meeting will be held prior to the award of a State Revolving Fund loan to describe to the public the selected plan for the construction of 500,000 gallon water storage tank, a 600 GPM water booster pump station, and approximately 3,050 feet of 12-inch diameter water main, and construction of approximately 1,130 linear feet of 12-inch diameter DIP transmission main along Georgetown Circle to the proposed Georgetown Road storage tank, and the associated user charges. Any issues arising from the public meeting will be addressed prior to the approval of the facilities plan.

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The annual median household income for Cleveland, Tennessee is \$36,645. At the projected time of the initiation of the loan repayment, user rates for the typical residential user (5,000 gallons per month) are \$37.65. The existing user charges are projected to be sufficient to repay the DWSRF loan. Therefore, no incremental increase in user charges will be required.

Sources consulted about this project for information or concurrence were:

1. Tennessee Department of Agriculture
2. Tennessee Department of Economic and Community Development (ECD)
3. Tennessee Department of Environment and Conservation (TDEC), Division of Air Pollution Control (DAPC)
4. Tennessee Department of Transportation (TDOT)
5. Tennessee Historical Commission
6. TDEC, Division of Archaeology (DA)
7. Tennessee Geological Survey
8. TDEC, Division of Solid Waste Management (DSWM)
9. TDEC, Division of Water Resources (DWR)
10. Tennessee Wildlife Resources Agency (TWRA)
11. United States Army Corps of Engineers (USACE)
12. United States Fish and Wildlife Service (USF&W)
13. Cleveland Utilities
14. Bradley County
15. Jacobs Engineering Co., Knoxville, TN.

H. SPECIAL CONDITION

The State Revolving Fund loan agreement will have the following special condition:

Cleveland shall obtain applicable Section 10/404 Permits from the U. S. Army Corps of Engineers to meet the requirements of wetlands protection and stream-crossing statutes. A letter from the Corps stating that the permits are not needed will obviate this requirement.